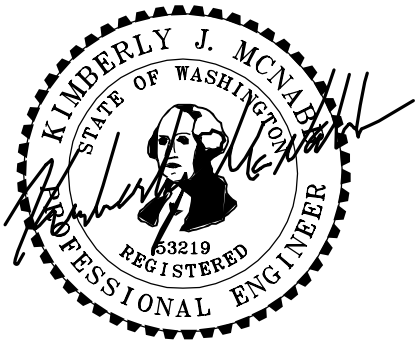
BLUELINE

December 18, 2019

Drainage Counter
City of Seattle - SDCI
700 5th Ave Avenue
P.O. Box 34019
Seattle, WA 98124-4019



12/18/2019

RE: Technical Information Report for: 904 E Highland Dr Seattle, WA 98012
SDCI Project No. 6702554-CN
Blueline Job No. 19-020

To Whom It May Concern:

In accordance with SMC 22.800, the subject land development project is required to comply with current stormwater regulations adopted by the City of Seattle. This Technical Information Report provides a brief narrative of the applicable requirements as well as calculations and documents supporting the proposed design.

The subject project is located at 904 E Highland Dr, tax parcel number 676270-0805, which has a total site area of 8,000 SF. On-site topography is dictated by existing structures, adjoining roadways and an environmentally critical area, and generally slopes from the southeastern corner of the parcel to the northwest. Existing on-site structures will be removed and replaced with a five story residential structure. This will include a partially below grade parking garage, and associated utility infrastructure. Under proposed conditions, on-site drainage will be collected and conveyed to a proposed catch basin located near the southeastern corner of the site, which discharges to the existing 10" public combined sewer main within E Highland Dr.

Project Minimum Requirements have been assessed using Figures 4.2A and 4.2B of Volume 1 of the 2017 Stormwater Manual (Directors Rule 17-2017). The project is required to amend on-site soils and provide On-site Stormwater Management. On-site Stormwater Management feasibility has been assessed utilizing the "On-site Stormwater Management – List Approach Calculator" attached to this letter. There is one non-infiltrating bioretention planter on-site that mitigates a portion of the roof area, as shown on Sheet C4 – On-Site Stormwater Management Plan and in the non-infiltrating bioretention planter table on Sheet C3 – Drainage Control Plan. This planter has capacity to treat 1,545 SF of roof area. An additional 1,464 SF of roof area shall also discharge to the planter but will remain unmitigated per Volume 3 Section 5.8.2 of the Seattle Stormwater Manual. Stormwater from the deck amenity space will discharge directly to the drainage system due to lack of space for additional bio-retention planters and inability to meet structure setbacks from steep slopes. Routing stormwater runoff from walkways, driveways, and other hardscape areas to a non-infiltrating bio-retention planter is infeasible due to the inability to gravity route these areas.

Water quality treatment is not required (Section 4.4.3 of Volume 1) because the project has less than 5,000 SF PGIS. Flow Control is not required (Section 5.4 of Volume 1) according to the Preliminary Assessment Report and because there is less than 10,000 sf of new plus replaced hard surface. Proposed landscape areas requiring soil mitigation are shown on the CSC/Soils plan. Infiltration investigation is not required as the site is mapped as "infiltration investigation not required." Sizing of the sediment tank from the "Large Project BMP Checklist" is enclosed. Applicable Operations and Maintenance requirements are per Appendix G in the Seattle Stormwater Manual. If you have any questions, please do not hesitate to call me at (425) 250-7234.

Sincerely,

Kimberly J. McNabb, PE
Project Manager

Enclosures: On-site Stormwater Management – List Approach Calculator, Large Project Construction BMP Checklist, Portable Sediment Tank Sizing.

On-site Stormwater Management - List Approach Calculator
Site and Drainage Control Summary

Version 07-28-2017

To use the On-Site List Calculator you must select "Enable Content" when the Security Warning appears.

Project Information

Site Address	904 E Highland Dr	SDCI Project Number	6702554-CN
Primary Contact	Kimberly McNabb, PE	SDOT Project Number	
Project Type	Parcel-Based	Primary Contact E-mail or Phone	425-250-7234

Total Site Area	8,000	sf
Total New plus Replaced Hard Surface Area	5,159	sf
Existing Hard Surface Area to Remain	0	sf
Total New and/or Replaced Lawn and Landscaping	926	sf
Undisturbed and protected site area	1,915	sf
Was the project lot created or reduced in size after Jan 1, 2016?	No	

Project Engineer	Kimberly J McNabb, PE	Engineer E-mail	kmcnabb@thebluelinegroup.com

On-site Stormwater Management required for ≥ 1,500 sf of new plus replaced area.

On-site Performance Standard will be used (professional engineer required)? No

Site Information

Note: If required for your project, reference the Preliminary Assessment Report (PAR) to complete this section. If the total areas proposed are different form those provided in the PAR, requirements may change.

Approved Point of Stormwater Discharge	Public Combined Sewer Main
Drainage Basin	Combined Sewer Service Area
Is the downstream drainage system considered Capacity Constrained by SPU?	No
Approved Point of Wastewater Discharge	Public Combined Sewer Main
Approved Point of Sub-Surface Discharge	Public Combined Sewer Main
Flow Control is required	No
Flow Control Standard	
Water Treatment for pollution-generating surfaces is required	No
Select required treatment	☐ Oil Control ☐ Phosphorus ☐ Enhanced ☐ Basic
Total Pollution Generating Hard Surface Area	sf
Total Pollution Generating Pervious Surface Area	sf
Source Control is required	No
Environmentally Critical Areas	Yes

☑ Steep Slope ☐ Potential Slide ☐ Riparian Corridor ☐ Wetland ☐ Liquefaction ☐ Flood Prone

☐ Landfill ☐ Known Landslide ☐ Fish / Wildlife ☐ Peat / Groundwater Management ☐ Shoreline Habitat

Temporary dewatering required	Yes	Permanent dewatering required	No
Is there known soil and/or groundwater contamination on this site?			No
A licensed professional recommends dispersion not be used anywhere within the project site due to reasonable concerns of erosion, slope failure, or flooding.			No

Infiltration Information

Is infiltration investigation required?	No	Why?	Site is mapped as "infltr. investigation not required"
Is infiltration on the site feasible?			

Site Measured Infiltration Rate ____ x Infiltration Rate Correction Factor 0.5 = 0 Site Design Inf Rate

On-site Stormwater Management

Number of roof areas	3
Number of other surface areas	1

Surface	Surfaces Description	On-site BMP	Contrib. Area (sf)	Facility Size (sf)	Facility Configuration
1	Roof:Roof Area Tributary	Non-Infiltrating Bioretention	2,999	168 sf	Vertical sides 6 inch
2	Roof:Roof Area to Draina	None Feasible	189	-	
3	Roof:Amenity Deck	None Feasible	878	-	
4	Surface:Driveways, Walk	None Feasible	1,093	-	

Total New/Replaced Roof Area	4,066	Total Roof Area Managed	4,066
Total New/Replaced Other Surface Area	1,093	Total Other Surface Managed	1,093
Total Area Managed	5,159	Total Volume Managed On Site	21,672 gal
Estimated compost required for soil amendment	5.7412 cy	*Volume of compost required for soil amendment will be verified by the DPD Site Inspector for SDCI permitted projects.*	

On-site Stormwater Management - List Approach Calculator
Surface Identification and BMP Evaluation for Parcel-Based Projects

Project No. 6702554-CN

Hard Surface Number	1
Hard Surface Type	Roof
Hard Surface Description	Roof Area Tributary to BP-1
Surface Area (sf)	2999

Category 1 (Select 1 BMP from Category 1, order does not matter, or move to Category 2)

BMP	Feasibility	Infeasibility Criteria (see infeasibility criteria tab for full text)
Full Dispersion	Infeasible	8 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slo
Infiltration Trench	Infeasible	Site is mapped as "Infiltration investigation not required."
Dry Well	Infeasible	Site is mapped as "Infiltration investigation not required."

Category 2

BMP	Feasibility	Infeasibility Criteria
Rain Garden	Infeasible	Site is mapped as "Infiltration investigation not required."
Infiltrating Bioretention	Infeasible	Site is mapped as "Infiltration investigation not required."
Rainwater Harvesting	Not Evaluated	
Evaluation not required for less than 10,000 sf of new and replaced rooftop but allowed.		
Permeable Pavement Facility	Infeasible	Site is mapped as "Infiltration investigation not required."
Permeable Pavement Surface	Not Evaluated	
Evaluation not allowed for roof surfaces.		

Category 3

BMP		Infeasibility Criteria
Sheet Flow Dispersion		
Concentrated Flow Dispersion		
Evaluation not allowed for roof surfaces.		
Splashblock Downspout Dispersion		
Trench Downspout Dispersion		
Non-Infiltrating Bioretention	Use BMP	Go to BMP Sizing
Vegetated Roof System		
Evaluation not required.		

Category 4

BMP		Infeasibility Criteria
Perforated Stub-out Connection		
New or Retained Trees		
Evaluation not allowed for roof surfaces.		

On-site Stormwater Management - List Approach Calculator
Surface Identification and BMP Evaluation for Parcel-Based Projects

Project No.	6702554-CN
Hard Surface Number	2
Hard Surface Type	Roof
Hard Surface Description	Roof Area to Drainage System
Surface Area (sf)	189

Category 1 (Select 1 BMP from Category 1, order does not matter, or move to Category 2)

BMP	Feasibility	Infeasibility Criteria (see infeasibility criteria tab for full text)
Full Dispersion	Infeasible	8 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slo
Infiltration Trench	Infeasible	Site is mapped as "Infiltration investigation not required."
Dry Well	Infeasible	Site is mapped as "Infiltration investigation not required."

Category 2

BMP	Feasibility	Infeasibility Criteria
Rain Garden	Infeasible	Site is mapped as "Infiltration investigation not required."
Infiltrating Bioretention	Infeasible	Site is mapped as "Infiltration investigation not required."
Rainwater Harvesting *Evaluation not required for less than 10,000 sf of new and replaced rooftop but allowed.*	Not Evaluated	
Permeable Pavement Facility	Infeasible	Site is mapped as "Infiltration investigation not required."
Permeable Pavement Surface *Evaluation not allowed for roof surfaces.*	Not Evaluated	

Category 3

BMP		Infeasibility Criteria
Sheet Flow Dispersion	Infeasible	7 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slo
Concentrated Flow Dispersion *Evaluation not allowed for roof surfaces.*	Not Evaluated	
Splashblock Downspout Dispersion	Infeasible	7 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slo
Trench Downspout Dispersion	Infeasible	7 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slo
Non-Infiltrating Bioretention	Infeasible	7 Runoff from this surface cannot be routed via a gravity system to the BMP.
Vegetated Roof System *Evaluation not required.*	Infeasible	2 Roof design has a slope less than 1 degree (0.2:12) or greater than 10 degrees (2:12).

Category 4

BMP		Infeasibility Criteria
Perforated Stub-out Connection	Infeasible	Site is mapped as "Infiltration investigation not required."
New or Retained Trees *Evaluation not allowed for roof surfaces.*	Not Evaluated	

On-site Stormwater Management - List Approach Calculator
Surface Identification and BMP Evaluation for Parcel-Based Projects

Project No.	6702554-CN
Hard Surface Number	3
Hard Surface Type	Roof
Hard Surface Description	Amenity Deck
Surface Area (sf)	878

Category 1 (Select 1 BMP from Category 1, order does not matter, or move to Category 2)

BMP	Feasibility	Infeasibility Criteria (see infeasibility criteria tab for full text)
Full Dispersion	Infeasible	8 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slo
Infiltration Trench	Infeasible	Site is mapped as "Infiltration investigation not required."
Dry Well	Infeasible	Site is mapped as "Infiltration investigation not required."

Category 2

BMP	Feasibility	Infeasibility Criteria
Rain Garden	Infeasible	Site is mapped as "Infiltration investigation not required."
Infiltrating Bioretention	Infeasible	Site is mapped as "Infiltration investigation not required."
Rainwater Harvesting *Evaluation not required for less than 10,000 sf of new and replaced rooftop but allowed.*	Not Evaluated	
Permeable Pavement Facility	Infeasible	Site is mapped as "Infiltration investigation not required."
Permeable Pavement Surface *Evaluation not allowed for roof surfaces.*	Not Evaluated	

Category 3

BMP		Infeasibility Criteria
Sheet Flow Dispersion	Infeasible	7 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slo
Concentrated Flow Dispersion *Evaluation not allowed for roof surfaces.*	Not Evaluated	
Splashblock Downspout Dispersion	Infeasible	7 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slo
Trench Downspout Dispersion	Infeasible	7 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slo
Non-Infiltrating Bioretention	Infeasible	2 Where BMP installation is prohibited per Regulations for Environmentally Critical Areas (SMC Chapter 25.09).
Vegetated Roof System *Evaluation not required.*	Infeasible	4 This portion of the roof is an amenity area subject to pedestrian use (e.g. balcony, patio, walkway, pet runs, etc.).

Category 4

BMP		Infeasibility Criteria
Perforated Stub-out Connection	Infeasible	Site is mapped as "Infiltration investigation not required."
New or Retained Trees *Evaluation not allowed for roof surfaces.*	Not Evaluated	

On-site Stormwater Management - List Approach Calculator
Surface Identification and BMP Evaluation for Parcel-Based Projects

Project No.	6702554-CN
Hard Surface Number	4
Hard Surface Type	Non-Roof
Hard Surface Description	Driveways, Walkways and Miscellaneous Hardscape
Surface Area (sf)	1093

Category 1 (Select 1 BMP from Category 1, order does not matter, or move to Category 2)

BMP	Feasibility	Infeasibility Criteria (see infeasibility criteria tab for full text)
Full Dispersion	Infeasible	8 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slo
Infiltration Trench	Infeasible	Site is mapped as "Infiltration investigation not required."
Dry Well	Infeasible	Site is mapped as "Infiltration investigation not required."

Category 2

BMP	Feasibility	Infeasibility Criteria
Rain Garden	Infeasible	Site is mapped as "Infiltration investigation not required."
Infiltrating Bioretention	Infeasible	Site is mapped as "Infiltration investigation not required."
Rainwater Harvesting *Evaluation not allowed for non-roof surfaces.*	Not Evaluated	
Permeable Pavement Facility	Infeasible	Site is mapped as "Infiltration investigation not required."
Permeable Pavement Surface	Infeasible	8 The permeable pavement wearing course slope exceeds 6 percent after reasonable efforts to grade.

Category 3

BMP		Infeasibility Criteria
Sheet Flow Dispersion	Infeasible	7 The dispersion flowpath area is in a steep slope area (SMC, Section 25.09.020) or within a setback to a steep slope area (calculated as 10 times the height of the steep slo
Concentrated Flow Dispersion	Infeasible	13 Greater than 700 square feet of surface area drains to the BMP.
Splashblock Downspout Dispersion *Evaluation not allowed for non-roof surfaces.*	Not Evaluated	
Trench Downspout Dispersion *Evaluation not allowed for non-roof surfaces.*	Not Evaluated	
Non-Infiltrating Bioretention	Infeasible	7 Runoff from this surface cannot be routed via a gravity system to the BMP.
Vegetated Roof System *Evaluation not allowed for non-roof surfaces.*	Not Evaluated	

Category 4

BMP		Infeasibility Criteria
Perforated Stub-out Connection *Evaluation not allowed for non-roof surfaces.*	Not Evaluated	
New or Retained Trees	Infeasible	3 The mature height, size, and/or rooting depth is not compatible with Medium and Large trees listed in the current Seattle Master Tree List.

On-site Stormwater Management - List Approach Calculator
BMP Sizing

Version 07-28-2017

More than one surface can drain to the same BMP. For example, a garage roof and driveway may be managed by a single infiltration trench. Please indicate which surfaces are draining to which BMPs in the dropdown menus.

Surface	Area (sf)	Select BMP
1	2,999	Non-Infiltrating Bioretention #1
2	189	None Feasible
3	878	None Feasible
4	1,093	None Feasible

BMP	BMP Facility Inputs		BMP Size and Credit
Non-Infiltrating Bioretention #1	Contributing Area (sf)	2,999	168 sf
	Ponding Depth (inch)	6	21,672 gal managed/year
	Sideslopes	Vertical sides	
None Feasible	Contributing Area (sf)	189	
None Feasible	Contributing Area (sf)	878	
None Feasible	Contributing Area (sf)	1,093	

Table 1b. Checklist to Select Large Project Construction BMPs.

Element Number	Required Element	Project Name: 904 E Highland Dr Large Project[a] (check selection)	If not applicable, describe why in the space below.
1	Mark Clearing Limits and Environmentally Critical Areas	Required BMPs: ☑ E1.30 Preserving Natural Vegetation (refer to *Section 4.1.2.1*) ☑ E1.35 Buffer Zones (refer to *Section 4.1.2.2*) ☑ E1.50 High Visibility Fencing (refer to *Section 4.1.2.5*)	
2	Retain Top Layer	Required BMP: Within the boundaries of the project site, retain the duff layer, top soil, and native vegetation, if there is any, in an undisturbed state to the maximum extent feasible. If it is not feasible to retain the top layer in place, stockpile on site, cover to prevent erosion, and replace immediately upon completion of the ground disturbing activities to the maximum extent feasible.	
3	Establish Construction Access	Required BMPs: ☑ E2.10 Stabilized Construction Entrance (refer to *Section 4.2.1.1*) ☐ E2.15 Tire Wash (refer to *Section 4.2.1.2*) ☐ E2.20 Construction Road Stabilization (refer to *Section 4.2.1.3*)	BMP E2.15 and E2.20 are not anticipated to be needed but shall be utilized as necessary.
4	Protect Downstream Properties and Receiving Waters	Required BMP for contributing area of 3 acres or greater: ☐ Ecology BMP C241 Temporary Sediment Pond (or Basin)	The contributing area is less than 3 acres.
5	Prevent Erosion and Sediment Transport from the Site	Required BMPs: ☑ E3.10 Filter Fence (refer to *Section 4.3.1*) ☐ Ecology BMP C231 Brush Barrier ☐ E3.20 Gravel Filter Berm (refer to *Section 4.3.2*) AND ☐ E3.40 Sediment Trap (refer to *Section 4.3.6*) OR ☐ Ecology BMP C241 Temporary Sediment Pond (or Basin) OR ☑ E3.50 Portable Sediment Tank (refer to *Section 4.3.7*) Additional recommended BMPs: ☐ E3.30 Vegetated Strip (refer to *Section 4.3.4*) ☐ E3.35 Straw Wattles, Compost Socks, and Compost Berms (refer to *Section 4.3.5*) ☐ E3.60 Construction Stormwater Filtration (refer to *Section 4.3.8*) ☐ Ecology BMP C250 Construction Stormwater Chemical Treatment	BMP C231, C241, E3.20 and E3.40 are not anticipated to be needed but shall be utilized as necessary.

Table 1b (continued). Checklist to Select Large Project Construction BMPs.

Element Number	Required Element	Project Name: 904 E Highland Dr Large Project[a] (check selection)	If not applicable, describe why in the space below.
6	Prevent Erosion and Sediment Transport From the Site by Vehicles	Required BMPs: ☑ E3.65 Cleaning Inlets and Catch Basins (refer to *Section 4.3.9*) ☑ E3.70 Street Sweeping and Vacuuming (refer to *Section 4.3.10*)	
7	Stabilize Soils	Required BMPs for all exposed soils and stockpiles – one or more of the following: ☐ E1.10 Temporary Seeding (refer to *Section 4.1.1.1*) ☐ E1.15 Mulching, Matting, and Compost Blankets (refer to *Section 4.1.1.2*) ☑ E1.20 Clear Plastic Covering (refer to *Section 4.1.1.3*) ☑ E1.40 Permanent Seeding and Planting (refer to *Section 4.1.2.3*) ☐ E1.45 Sodding (refer to *Section 4.1.2.4*) ☐ E2.45 Dust Control (refer to *Section 4.2.1.6*) ☐ Ecology BMP C130 Surface Roughening ☐ Ecology BMP C131 Gradient Terracing ☐ Ecology BMP C126 Polyacrylamide for Soil Erosion Protection	
8	Protect Slopes (refer to the Environmentally Critical Areas ordinance [SMC 25.09.180] for additional requirements and development standards for steep slopes)	Required BMPs – one or more of the following: ☐ Level Spreader (refer to *Appendix E*) ☑ E2.35 Check Dams (refer to *Section 4.2.1.4*) ☐ E2.40 Triangular Silt Dike (Geotextile-encased Check Dam) (refer to *Section 4.2.1.5*) ☐ Pipe Slope Drains (refer to *Appendix E*) ☐ E2.70 Subsurface Drains (refer to *Section 4.2.3.1*) ☐ E2.80 Earth Dike and Drainage Swale (refer to *Section 4.2.3.2*) ☑ Ecology BMP C130 Surface Roughening ☐ Ecology BMP C131 Gradient Terracing ☐ Ecology BMP C201 Grass-lined Channels	

Table 1b (continued). Checklist to Select Large Project Construction BMPs.

Element Number	Required Element	Project Name: 904 E Highland Dr Large Project[a] (check selection)	If not applicable, describe why in the space below.
9	Protect Storm Drains	Required BMPs: ☑ E3.25 Storm Drain Inlet Protection (refer to *Section 4.3.3*) ☑ E3.65 Cleaning Inlets and Catch Basins (refer to *Section 4.3.9*) ☑ E3.70 Street Sweeping and Vacuuming (refer to *Section 4.3.10*)	
10	Stabilize Channels and Outlets	Required BMPs – one or more of the following: ☐ Level Spreader (refer to *Appendix E*) ☐ E2.35 Check Dams (refer to *Section 4.2.1.4*) ☐ E2.80 Earth Dike and Drainage Swale (refer to *Section 4.2.3.2*) ☐ Outlet Protection (refer to *Appendix E*) ☐ Ecology BMP C201 Grass-lined Channels ☐ Ecology BMP C202 Channel Lining ☐ Ecology BMP C203 Water Bars	Channels and outlets are not present or proposed on-site.
11	Control Pollutants (also refer to *Volume 4 – Source Control*)	Required BMPs: ☑ C1.15 Material Delivery, Storage, and Containment (refer to *Section 5.1.1*) ☐ C1.20 Use of Chemicals During Construction (refer to *Section 5.1.2*) ☑ C1.25 Demolition of Buildings (refer to *Section 5.1.3*) ☐ C1.30 Building Repair, Remodeling, and Construction (refer to *Section 5.1.4*) ☑ C1.35 Sawcutting and Surfacing Pollution Prevention (refer to *Section 5.1.5*) ☑ C1.45 Solid Waste Handling and Disposal (refer to *Section 5.1.7*) ☐ C1.50 Disposal of Asbestos and Polychlorinated Biphenyls (PCBs) (refer to *Section 5.1.8*) ☐ C1.55 Airborne Debris Curtain (refer to *Section 5.1.9*) ☑ C1.56 Concrete Handling and Disposal (refer to *Section 5.1.10*) ☐ C1.59 High pH Neutralization Using CO_2 (refer to *Section 5.1.11*)	BMPs C1.20, C1.30, C1.50, C1.55, and C1.59 are not anticipated to be needed but shall be utilized as necessary.

Table 1b (continued). Checklist to Select Large Project Construction BMPs.

Element Number	Required Element	Project Name: 904 E Highland Dr Large Project[a] (check selection)	If not applicable, describe why in the space below.
12	Control Dewatering	Required BMP: ☑ C1.40 Temporary Dewatering (refer to *Section 5.1.6*)	
13	Maintain BMPs	Required BMP: ☑ Maintain and repair all temporary and permanent erosion and sediment control BMPs as needed to assure continued performance of their intended function.	
14	Inspect BMPs	Required BMP: ☑ Inspect, maintain, and repair all BMPs as needed to assure continued performance of their intended function. ☐ Certified Erosion and Sediment Control Lead (refer to *Section 2.3*): For projects over one (1) acre; inspections should be conducted by the Certified Erosion and Sediment Control Lead identified in the Large Project Construction Stormwater and Erosion Control Plan.	Proposed improvements encompass less than one (1) acre of land disturbing activity.
15	Execute Construction Stormwater and Erosion Control Plan	Required BMPs: Implement and maintain an updated Construction Stormwater and Erosion Control Plan beginning with initial land disturbance. ☑ Retain the Large Project Construction Stormwater and Erosion Control Plan on site or within reasonable access to the site. Modify the plan as needed. Coordination with Utilities, Contractors, and Others ☑ The primary project proponent should evaluate, with input from utilities and other contractors, the stormwater management requirements for the entire project, including the utilities, when preparing the Small Project Construction Stormwater and Erosion Control Plan. Project Close-out ☑ Remove all temporary erosion and sediment control BMPs within 5 business days after final site stabilization is achieved, or after they are no longer needed, whichever is later.	

Table 1b (continued). Checklist to Select Large Project Construction BMPs.

Element Number	Required Element	Project Name: 904 E Highland Dr Large Project[a] (check selection)	If not applicable, describe why in the space below.
16	Minimize Open Trenches	Required BMP: In the construction of underground utility lines, where feasible, no more than one hundred and fifty (150) feet of trench should be opened at one time, unless soil is replaced within the same working day. Where consistent with safety and space considerations, place excavated material on the uphill side of trenches. Trench dewatering devices should discharge into a sediment trap or sediment pond.	
17	Phase the Project	Required BMPs: Construction Phasing ☑ Phase development projects where feasible in order to prevent soil erosion and, to the maximum extent practicable, the transport of sediment from the site during construction. Seasonal Work Limitations ☑ From October 31 through April 1, clearing, grading, and other soil disturbing activities will be subject to additional limitations.	
18	Install Permanent Flow Control and Water Quality Facilities	• Refer to *Volume 1* for applicable minimum requirements and *Volume 3* for BMP design.	
19	Protect Stormwater BMPs	General: Protect all stormwater BMPs from sedimentation through installation and maintenance of erosion and sediment control BMPs. Restore the BMPs to their fully functioning condition if they accumulate sediment during construction. Restoring the stormwater BMP must include removal of sediment and any sediment-laden soils, and replacing the removed soils with soils meeting the design specification. ☐ The approved plan sheets provide construction sequencing that protect the infiltration facility during construction. Sediment Control: Protect infiltration BMPs from sedimentation that can clog the facility and reduce infiltration capacity. ☐ Minimize site disturbance at the location of the infiltration BMPs and in up-gradient areas. ☐ Do not use infiltration BMPs as sediment control facilities. ☐ Direct all drainage away from the facility location after initial rough grading.	No infiltration facilities are proposed on-site.

Table 1b (continued). Checklist to Select Large Project Construction BMPs.

Element Number	Required Element	Project Name: 904 E Highland Dr Large Project[a] (check selection)	If not applicable, describe why in the space below.
19	Protect Stormwater BMPs (continued)	☐ Flow can be directed away from the facility with temporary diversion swales or other approved protection. ☐ Do not construct infiltration BMPs until all contributing drainage areas are stabilized with appropriate erosion and sediment control BMPs and to the satisfaction of the engineer. ☐ Inspect and maintain erosion and sediment control practices on a regular basis. If deposition of sediment occurs in the infiltration area, remove material and scarify the surface to a minimum depth of 3 inches. ☐ Control erosion and avoid introducing sediment from surrounding land uses onto permeable pavements. Do not allow muddy construction equipment on the base material or pavement. Do not allow sediment-laden runoff onto permeable pavements or base materials. ☐ Permeable pavement fouled with sediments or no longer passing an initial infiltration test must be cleaned until infiltrating per design or replaced. Compaction Prevention: Soil compaction can lead to a reduction of infiltration rates and facility failure; accordingly, minimizing compaction of the base and sidewalls of the infiltration area is critical. ☐ Before the development site is graded, rope/fence the area of the infiltration BMP to restrict access and flag to prevent soil compaction by heavy equipment and foot traffic. ☐ Perform excavation with machinery operating adjacent to the infiltration BMP and do not allow heavy equipment with narrow tracks, narrow tires, or large lugged, high pressure tires on the bottom of the infiltration BMP footprint. ☑ Protect established completed lawn and landscaped areas from compaction due to construction equipment. ☑ Do not excavate during wet or saturated conditions.	

[a] A large project is one with greater than or equal to 5,000 square feet of new plus replaced hard surface, or greater than or equal to 1 acre of land-disturbing activity.

[b] Recommended BMPs provide further guidance for minimizing potential stormwater pollution resulting from activities.

BLUELINE

PROJECT ADDRESS: 904 E Highland Dr
BLUELINE PROJECT NUMBER: 19-020
DATE: 12/18/2019

PORTABLE SEDIMENT TANK SIZING CALCULATION:

THE FOLLOWING CALCULATIONS HAVE BEEN MADE IN ACCORDANCE WITH CHAPTER 2 OF VOLUME 2 OF THE 2016 STORMWATER MANUAL FOR THE SIZING OF A PORTABLE SEDIMENT TANK (BMP E3.50). THE RUNOFF RATE THE CONSTRUCTION SITE HAS BEEN CONSERVATIVELY ASSUMED TO BE IMPERVIOUS LAND COVER. WWHM2012 AND SPU'S 158 YEAR PRECIP/EVAP, 5-MINUTE DATA HAS BEEN USED TO DETERMINE THE 2-YEAR PEAK RUNOFF ON A PER ACRE BASIS. THE PROJECT SITE AREA HAS BEEN MULTIPLIED BY THIS RUNOFF RATE/ACRE TO DETERMINE THE DESIGN FLOW.

WWHM2012
PROJECT REPORT

Project Name: Construction Site
Site Name:
Site Address: Anywhere in Seattle
City : Seattle
Report Date: 2/29/2016
Gage :
Data Start : 10/01/1901
Data End : 09/18/2059
Precip Scale: 1.00
Version : 2015/01/08

PREDEVELOPED LAND USE
Name : Construction Basin

Impervious Land Use	Acres
ROADS FLAT	1
Impervious Total	1
Basin Total	1

Flow Frequency Return Periods for Construction Basin. POC #1

Return Period	Flow(cfs)
2 year	0.50305
10 year	0.854081
25 year	1.059697

CALCULATING THE PUMP DESIGN FLOW RATE:

Site Area=	8000	sf	<-- INPUT SITE AREA HERE
Site Area=	0.184	Acres	
Q_2/Acre =	0.50305	CFS/Acre	
Pump Design Flow Rate =	0.092	CFS	
Pump Design Flow Rate =	41	**gpm**	(Sediment tank inflow rate. Max outflow rate set at 230 gpm)

DETERMINING THE VOLUME REQUIRED IN ACCORDANCE WITH BMP E3.50 (PORTABLE SEDIMENT TANK):

$V_{(CF)} = Q_{(GPM)} \times 16 =$ 662 CF

$V_{(GAL)} = V_{(CF)} \times 7.48 =$	4954	GALLONS (MINIMUM STORAGE VOLUME REQUIRED)